



Nevada Operations Office News

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National Nuclear Security Administration Scientists to Conduct Vito Subcritical Experiment

Scientific Data to Help Certify and Ensure the Safety and Reliability Of the Nation's Stockpile Without Nuclear Testing

The National Nuclear Security Administration Nevada Operations Office will conduct a subcritical experiment called *Vito* at the Nevada Test Site on Thursday, February 14, at 12 p.m. (PST). The United Kingdom will be participating in this experiment under the terms of the 1958 Mutual Defense Agreement.

Subcritical experiments produce essential scientific data and technical information to maintain the safety and reliability of the nuclear weapons stockpile without underground nuclear testing. The experiments are subcritical; that is, no critical mass is formed and thus no self-sustaining nuclear chain reaction can occur. There is no nuclear explosion.

Vito, a Los Alamos National Laboratory (LANL) subcritical experiment, is designed to answer questions about ejecta and spall associated with plutonium. Ejecta is a violent spray of particles that are propelled from a material's surface when it is compressed by a powerful shock wave. Spall is the breakup of material from the explosive shock wave reflected back from the surface.

Subcritical experiments are conducted at the Nevada Test Site's U1a Complex located 85 miles northwest of Las Vegas. The U1a Complex is designed to contain these experiments in a safe and secure environment in an underground laboratory of horizontal tunnels with small excavated experiment alcoves mined at the base of a vertical shaft, approximately 960 feet beneath the surface.

Los Alamos scientists conducted their last subcritical experiment, *Thoroughbred*, on March 22, 2000.